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Morality in Sport: A Self-Determination Theory Perspective

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Abstract

This study used a sample of 314 British athletes (170 male, 144 female) to examine whether social-contextual and personal motivation variables proposed by self-determination theory (Deci & Ryan, 2002) can predict reported levels of sportspersonship and antisocial moral attitudes in sport. Structural equation modeling analysis showed that perceptions of coach autonomy support were positive predictors of athletes' satisfaction of their psychological needs for competence, relatedness and autonomy. In turn, the three needs were positive predictors of autonomous motivation. Autonomous motivation positively predicted sportspersonship and negatively predicted antisocial moral attitudes in sport. The opposite pattern of results was observed between controlled motivation and the sportspersonship and antisocial moral attitudes variables. The findings emphasize the importance of autonomy supportive environments, psychological need satisfaction and autonomous motivation for fostering sportspersonship in sport.

Keywords: sportspersonship, cheating, gamesmanship, basic psychological needs, autonomous motivation, controlled motivation, autonomy support

Morality in Sport: A Self-Determination Theory Perspective

Self-determination theory (SDT; Deci & Ryan, 2002) is a theoretical framework that has been extensively used during the last decade to study cognitive, affective and behavioral consequences of different types of motivation in sport and other physical activity settings. A broad variety of motivation-related outcomes have been assessed providing empirical support for the major tenets of this theory in sport settings (cf. Hagger & Chatzisarantis, 2007). However, it is striking that this line of work has largely overlooked the role of motivational variables outlined by SDT in predicting indices of morality in sport. Given that variations in indices of morality are common across different types of sport and levels of competition (e.g., Boardley & Kavussanu, 2007; Kavussanu & Ntoumanis, 2003; Shields & Bredemeier, 2007), we aimed in this study to address this void in the extant literature. Specifically, we examined whether social-contextual and personal motivational factors outlined by SDT can predict sportspersonship and antisocial moral attitudes in sport.

A Brief Overview of SDT

Deci and Ryan (2002) suggested that socio-contextual factors can influence human motivation by impacting on three basic and innate psychological needs. These are the need to feel autonomous (i.e., have a sense of ownership in one's actions), competent (i.e., feel efficacious in producing desired outcomes), and related (i.e., form meaningful relationships with others). Socio-contextual environments that foster and satisfy these needs have been labeled in the SDT literature as autonomy-supportive ones. These environments offer choice, support individual volition, minimize pressure and control, acknowledge negative feelings (i.e., provide empathy), and offer meaningful rationale for engaging in activities (Reeve & Jang, 2006). Despite its name, an autonomy supportive environment is conducive to the satisfaction of not only the need for autonomy, but also of those for competence and relatedness (Ryan & Deci, 2000).

The degree to which the three psychological needs are satisfied is related to the extent to which human behavior is guided by autonomous or controlled motivation (i.e., an individual's motivation is hypothesized to be autonomous when the three needs are satisfied and controlled when these needs are thwarted). In recent years, SDT has moved from a focus on intrinsic versus extrinsic motivation to distinguish between *autonomous* and *controlled* types of motivation (Deci & Ryan, 2008). Motivational regulations that serve to form composite scores for autonomous and controlled motivation are located on a self-determination continuum that distinguishes among autonomous and controlled reasons for behavioral enactment (cf. Deci & Ryan, 2008).

Autonomous motivation is underpinned by (in decreasing order of self-determination) intrinsic motivation, integrated regulation, and identified regulation. These types of motivation are evident when activities are performed because they are inherently interesting (intrinsic), or they have been integrated within one's sense of self (integrated), or because they result in personally valuable outcomes (identified).¹ Aligned with SDT, recent empirical work has combined intrinsic motivation and identified regulation to form a composite score labeled "autonomous motivation" (e.g., Mouratidis, Vansteenkiste, Lens, & Sideridis, 2008; Standage, Sebire, & Loney, 2008).

Controlled motivation is underpinned by regulation types located at the low self-determined end of the continuum. Presented in a decreasing order of self-determination, these types are labeled introjected and external regulation. Introjected regulation is evident in situations where behavior is the result of internal pressures, such as the pursuit of contingent self-worth or feelings of guilt and shame. In contrast, external regulation is manifested when behavior is the product of external pressures, threats of punishment or rewards. Introjected and external regulations have been combined in the literature and labeled as low self-determined or "controlled motivation" (e.g., Nix, Ryan, Manly, & Deci, 1999; Standage et al., 2008).

The extensive empirical evidence on the application of SDT in sport demonstrates that

autonomous forms of regulation, compared to controlled forms of regulation, result in more adaptive outcomes such as effort, persistence, performance, and various indices of psychological well-being (see Vallerand, 2007, for an overview). However, and as stated at the outset of this paper, the research evidence on how SDT variables predict indices of morality in sport is scant. Vallerand and Losier's (1984) study is an exception. Using a cross-lagged design, the authors tracked a sample of male adolescent hockey players at the beginning of the hockey season and at the end of the regular season, five months later. At both time points, the authors obtained an index of overall self-determination (this index assigns weights to the different types of regulation depending on their position along the self-determination continuum) and a sportspersonship index that predominantly reflects pro-social self-reported behaviors (e.g., adherence to social conventions, rules and officials). The results of cross-lagged correlations showed that early self-determined motivation in sport was more strongly correlated with late sportspersonship than early sportspersonship was with late self-determined motivation.

Thus, it seems that understanding why athletes play sport might help to explain how they play it (Vallerand & Losier, 1984). As Shields and Bredemeier (2007) emphasized, a limitation of studies on morality is the absence of *why* explanations, in other words, why individuals choose certain values or engage in particular behaviors over others. SDT can offer a motivational account of such *why* explanations. The reasons that underpin self-determined behavior (e.g., have fun, opportunities for social affiliation) are likely to steer athletes toward prosocial behaviors and sportspersonship acts in sport, such as helping others and adhering to the rules of the game. In contrast, controlled motives, such as the pursuit of extrinsic rewards and social approval or the avoidance of guilt and punishment, are more likely to steer athletes away from sportspersonship acts and closer to antisocial attitudes or behaviors (e.g., cheating, upsetting the opposition psychologically). It should be emphasized that Vallerand and Losier (1984) (i) did not examine the

independent contributions of autonomous and controlled motivation on sportspersonship, and (ii) did not focus on antisocial attitudes or behaviors. In an attempt to extend the extant literature, in the present study we sought to examine the relationships between autonomous and controlled motivation with reported levels of sportspersonship and antisocial moral attitudes.

Outside sport, empirical work linking SDT variables with moral behavior is also scarce. A notable exception is a study of two samples of college students and volunteer workers by Gagné (2003). In this study it was shown that perceptions of parental and work autonomy support, respectively, predicted directly psychological need satisfaction and, indirectly, various indices of prosocial engagement (e.g., volunteering, donating money to a charitable organization, helping in emergency situations). However, Gagné did not include any measure of antisocial behavior or attitudes. Further, she did not assess the indirect effects of psychological need satisfaction on prosocial behavior via motivational regulations. In the present work we will examine the indirect effects of the need satisfaction variables on both sportspersonship and antisocial attitudes via autonomous and controlled motivation.

Morality in Sport

The concept of morality (and associated concepts such as sportspersonship, fairplay, etc.) has attracted considerable research interest in the field of sport psychology. One possible reason for this might be the frequent appearance in the media of incidents of prosocial and antisocial behavior in various sports. Another reason may be the lay, yet empirically unfounded, belief that sport participation *per se* contributes to character building and the development of moral attitudes that can be transferred to other contexts (e.g., Shields & Bredemeier, 2007). Various theoretical frameworks have been employed to investigate moral issues in sport, the description of which is beyond the purpose of this study (see Shields & Bredemeier, 2007 for an overview).

Two separate but related lines of research are relevant to this study. The first is by

Vallerand, Deshaies, Cuerrier, Brière, and Pelletier (1996) who asked a large sample of young athletes to provide their definition of sportsmanship (subsequently called sportspersonship by Vallerand, Brière, Blanchard, & Provencher, 1997) and examples of sportsmanlike behavior. Drawing from the results of this survey, Vallerand et al. (1996, 1997) proposed a multidimensional definition of sportsmanship/ sportspersonship encompassing the following aspects: (a) full commitment to participation, (b) respect for social conventions, (c) respect for rules and officials, (d) respect for opponents, (e) a negative approach to participation. Only the last factor focuses on an antisocial dimension (i.e., the importance of winning at all costs). As such, Vallerand et al. identified and subsequently assessed primarily positive socio-moral behaviors involved in sports participation.

A second line of research which is relevant to this study has been conducted by Lee and colleagues. For example, Lee, Whitehead and Ntoumanis (2007) presented a series of studies that developed a new scale tapping two negative and one positive aspect of sport participation: acceptance of cheating, acceptance of gamesmanship and keeping winning in proportion. Gamesmanship is a British term used to describe a category of actions that, although they do not violate the rules of the sport, they contravene the spirit of the contest, primarily by attempting to psychologically unsettle opponents. In a subsequent study of young British athletes, Lee, Whitehead, Ntoumanis and Hatzigeorgiadis (2008) found support for a model in which the latent factors ‘prosocial attitudes’ (indexed by Vallerand et al.’s, 1997, full commitment to participation and respect for social conventions) and ‘antisocial attitudes’ (indexed by acceptance of cheating and gamesmanship) were directly predicted by task and ego achievement goal orientations, respectively. Further, direct positive and negative, respectively, paths were found from moral values to the prosocial and antisocial factors. In addition, task and ego orientation mediated the effects of competence values on prosocial attitudes and of status values on antisocial attitudes,

respectively. Lee et al.'s (2008) findings as they pertain to the effects of task and ego goal orientations on prosocial and antisocial attitudes are aligned with a number of other studies in the sport psychology literature that have examined motivational predictors of morality from an achievement goal theory perspective (see Kavussanu, 2007, for a review).

Purpose and Hypotheses

We aimed to expand a very limited knowledge base on morality-related outcomes of personal and contextual motivational variables proposed by SDT. Specifically, we tested a model (see Figure 1) which hypothesized that perceptions of autonomy supportive environments would positively impact on athletes' psychological need satisfaction. In turn, the three psychological needs were expected to be positive predictors of autonomous motivation and negative predictors of controlled motivation. Autonomous motivation was hypothesized to positively predict indices of sportpersonship in sport (drawing from the work of Vallerand et al., 1996, 1997) and negatively predict antisocial moral attitudes (drawing from the work of Lee et al., 2007, 2008). The opposite pattern of relationships was expected between controlled motivation and the sportpersonship and antisocial attitudes variables. Autonomy support was hypothesized to have positive indirect effects on autonomous motivation and sportpersonship, and negative indirect effects on controlled motivation and antisocial attitudes. The need-satisfaction variables (i.e., autonomy, competence, and relatedness) were expected to have positive indirect effects on sportpersonship, and negative indirect effects on antisocial attitudes.

Method

Participants

Participants were 314 (170 male, 144 female) athletes from a variety of individual and team sports (i.e., soccer, rugby, hockey, swimming, athletics, and rowing). Recruited from two universities in the South West of the United Kingdom, the participants ranged in age from 18 to 25

years ($M = 19.67$; $SD = 1.59$). On average, participants had participated in their sport for almost six years ($M = 5.82$ years; $SD = 4.30$), while the mean period of time on their current team/squad was a little over two years ($M = 2.23$ years; $SD = 1.77$). In terms of competitive level, participants ranged from university to international level athletes. Finally, in terms of race, 274 participants identified themselves as being Caucasian, 17 as Black, 8 as Indian, 8 as Chinese, 4 as Arab, 1 as Latin American, 1 as Hispanic, and 1 as Korean.

Procedure

After providing written informed consent, the participants responded to a multi-section questionnaire during a regular training session. An investigator distributed the inventory and was on hand to help any participant who had questions pertaining to the wording and/or meaning of the questionnaire items. The participants were reassured that the completed questionnaires would be treated in strictest confidence and their anonymity would be preserved. Participants were also offered the option to withdraw from the study at any time without any negative repercussions. No participant refused to participate, nor did any participant withdraw from the study.

Measures

Autonomy support. The participants' perceptions of autonomy support, as provided by their sports coach, were assessed using an amended sport-version of the 6-item Health-Care Climate Questionnaire (HCCQ; Williams, Grow, Freedman, Ryan, & Deci, 1996). Specifically, and consistent with past work (e.g., Reinboth, Duda, & Ntoumanis, 2004; Smith, Ntoumanis, & Duda, 2007), the items of the HCCQ were modified slightly to target the sport context. Example items include "I feel that my coach provides me with choices and options" and "my coach listens to how I would like to do things." Item responses were provided to a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Past work has documented support for the validity and reliability of this amended scale (Reinboth et al., 2004).

Autonomy. Autonomy was measured using five items that have been used previously to assess autonomy in the context of school physical education (Standage, Duda, & Ntoumanis, 2003). Preceded by a slightly amended stem (“In this sport....”), participants responded to the items (e.g., “I have some choice in what I want to do”) on a 7-point scale anchored by 1 (*strongly disagree*) to 7 (*strongly agree*). Support for the internal consistency of these items when adapted to target the sport context has been reported ($\alpha = .80$; Smith et al., 2007).

Competence. Competence was assessed using the 5-item Perceived Competence subscale of the Intrinsic Motivation Inventory (IMI; McAuley, Duncan, & Tammen, 1989). An example item is “I think that I am pretty good at this sport.” Responses to the competence subscale of the IMI were indicated on a 7-point scale anchored by 1 (*strongly disagree*) to 7 (*strongly agree*). Support for the validity and reliability of the IMI competence subscale has been reported in past work with British athletes (Reinboth et al., 2004).

Relatedness. The acceptance subscale of the Need for Relatedness Scale (Richer & Vallerand, 1998) was used to assess relatedness. The stem was modified in the present study to target sport (i.e., “With the other athletes I feel....”) and was followed by five items such as “valued” and “supported.” Participants responded on a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Via Cronbach’s alpha coefficients, reliable scores pertaining to this scale have been reported in previous sport work with British athletes (Smith et al., 2007).

Motivation. Responses to the subscales of the Sport Motivation Scale (SMS; Pelletier Fortier, Vallerand, & Tuson, 1995) were used to provide composite scores for autonomous and controlled motivation. Aligned with the autonomous versus controlled motivation distinction posited by SDT and commensurate with past work (e.g., Mouratidis et al., 2008; Nix et al., 1999; Standage et al., 2008), the average of the SMS’s intrinsic motivation subscales (i.e., to know, to accomplish, and to experience stimulation) and identified regulation was used to provide a

composite score for autonomous motivation. Similarly, a composite score for controlled motivation was created by averaging responses provided to the introjected regulation and external regulation subscales. Preceded by the stem “Why do you practice your sport...”, participants used a 7-point scale ranging from 1 (*does not correspond at all*) to 7 (*corresponds exactly*) to respond to the items assessing their motivation towards sport. Previous research in the sporting domain has provided support for the factor structure and internal consistency of this measure (Li & Harmer, 1996; Smith et al., 2007).

Sportspersonship. We used the four positively worded subscales of the Multidimensional Sportsmanship Orientation Scale (MSOS; Vallerand et al., 1997). Specifically, the participants responded with regard to their commitment toward participation (e.g., “It is important to me to be present at all practices”), respect for rules and officials (e.g., “I respect the rules”), respect for conventions (e.g., “When I lose, I congratulate the opponent whoever he or she is”), and respect and concern for the opponent (e.g., “When an opponent gets hurt, I ask the referee to stop the game so that he or she can get help”) subscales. All responses were made on a 5-point scale ranging from 1 (*doesn't correspond to me at all*) to 5 (*corresponds to me exactly*). Past work has provided support for the internal consistency and factorial validity of the MSOS subscales (e.g., Vallerand et al., 1997). For the purpose of testing the proposed structural equation model (SEM), we used the four subscale scores as indicators of the latent factor ‘sportspersonship’.

Antisocial moral attitudes. Two subscales of the Attitudes to Moral Decision-making in Youth Sport Questionnaire (AMDYSQ; Lee et al., 2007) were used to assess the participants’ antisocial moral attitudes (i.e., acceptance of cheating and acceptance of gamesmanship). An example item for acceptance of cheating subscale is “I would cheat if I thought it would help me win”, while an example item for the acceptance of gamesmanship subscale is “Sometimes I waste time to unsettle the opposition.” Participants were asked to respond to the items on a 5-point scale

anchored by 1 (*strongly disagree*) to 5 (*strongly agree*). Lee et al. (2007) provided support for the concurrent validity, internal consistency, and factorial validity of this measure in their 5-study scale-development paper. For the purpose of testing the proposed SEM model, the two subscale scores were used as indicators of the latent factor ‘antisocial attitudes’.

Results

Descriptive Statistics

Table 1 contains the means, standard deviations, and alpha coefficient values for all measures. The Cronbach’s alpha coefficients ranged from .80 to .91. As indicated by the mean values, participants generally agreed that their coaches fostered an autonomy-supportive climate. Participants also reported agreement to the items assessing autonomy, competence, and relatedness need satisfaction. On average, participants indicated that the items assessing autonomous motivation corresponded to them, whereas controlled reasons corresponded to them “a little” to “moderately.” Finally, participants reported the sportspersonship items to correspond to them “partly” to “a lot”, whereas the antisocial moral attitudes items corresponded to them “a little” to “partly.”

The inter-correlation matrix is also presented in Table 1. An inspection of the bivariate correlations revealed that perceptions of autonomy support were positively associated with autonomy, competence, relatedness, autonomous motivation, and sportspersonship. The three need-satisfaction variables were positively associated with autonomous motivation. Autonomy and competence were also positively correlated with controlled motivation. Autonomy and relatedness were positively associated with sportspersonship, while competence was positively related to antisocial moral attitudes. Autonomous motivation was positively associated with sportspersonship whereas controlled motivation was positively correlated with antisocial moral attitudes and to a lesser extent with sportspersonship.

Structural Equation Modeling Analysis (SEM)

An inspection of the Mardia's Coefficient value (61.86, $p < .001$) revealed the data to depart from multivariate normality. As such, SEM analyses were conducted using the bootstrapping procedure with 5000 bootstrap replication samples to more accurately assess the stability of parameter estimates (Byrne, 2001).

It was not possible to conduct a full latent analysis of the hypothesized model as the sample size was not sufficiently large to meet an acceptable number of cases per estimated parameter (i.e., over 5; Bentler & Chou, 1987). As such, we used a parceling technique that has been used in previous work testing similar complex models of motivational processes (e.g., Reinboth et al., 2004; Standage & Gillison, 2007). In the present work, and with the exception of the latent factors of sportspersonship and antisocial attitudes, which were indexed by four and two subscales respectively, we randomly created parcels of items to form two indicators for each latent factor². In adopting this approach, our resultant ratio of approximately 5.6 participants per each estimated parameter was adequate (Bentler & Chou, 1987).

To assess the adequacy of the measurement models to the data, a two-index presentation strategy proposed by Hu and Bentler (1999) was used. This approach advances the use of the Standardized Root Mean Square Residual (SRMR) coupled with one or more incremental or absolute indexes of fit. In the present work, we chose to supplement the SRMR with the Comparative Fit Index (CFI) and Incremental Fit Index (IFI). For the CFI and IFI, values of over .90 are indicative of an *acceptable* fit, whereas values of close to (or above) .95 represent an *excellent* fit between the model and data (Hu & Bentler, 1999). Values close to .08 (or lower) for the SRMR are indicative of a well-specified model (Hu & Bentler, 1999).

Using Version 7 of the AMOS software (Arbuckle, 2006), the adequacy of the proposed model (Figure 1) was explored using a two-step model building approach advanced by Anderson

and Gerbing (1988). In this process, Step 1 involves the testing of the measurement model via confirmatory factor analysis. Results revealed a good fit between model and the data [$\chi^2(124) = 332.00, p < .001$; CFI = .94; IFI = .94; SRMR = .06]. The second stage of the model building approach pertains to an examination of the path model outlined in Figure 1. Results showed the model to provide a satisfactory fit to the data [$\chi^2(134) = 372.60, p < .001$; CFI = .93; IFI = .93; SRMR = .07]. However, the paths that were hypothesized from relatedness and autonomy to controlled motivation were not significant and were dropped from the model ($\beta = -.02$ and $\beta = .11$, respectively). The model was subsequently reanalyzed. Results showed the slightly modified model to retain a satisfactory fit to the data [$\chi^2(136) = 374.83, p < .001$; CFI = .93; IFI = .93; SRMR = .07].

The standardized solution for the final model is shown in Figure 2. Perceptions of autonomy support positively predicted all three psychological needs. These needs, in turn, predicted autonomous motivation. Unexpectedly, competence also predicted controlled motivation. Autonomous motivation was a strong positive predictor of sportspersonship and a negative predictor of antisocial attitudes. In contrast, controlled motivation was a strong positive predictor of antisocial attitudes and a negative predictor of sportspersonship. The standardized indirect effects are reported in Table 2. Also shown in Table 2 are the 95% upper and lower limits of bootstrap-generated bias-corrected confidence intervals (CI) of the indirect effects.

Discussion

This paper aimed to address a void in the SDT-based literature (both in sport as well as in other life contexts) as to how social-contextual and personal motivational factors predict sportspersonship and antisocial attitudes. As Vallerand and Losier (1984) noted, our understanding of how athletes play their sport (e.g., whether they respect their opponents or whether they engage in cheating behaviors) could be facilitated by knowing the motives that underlie their sport

participation. To this end, we tested a model that hypothesized that athletes' sportpersonship and antisocial attitudes would be directly predicted by their autonomous and controlled motivation, and indirectly via their perceptions of coach autonomy support and psychological need satisfaction.

To a large extent, the results supported our hypotheses. Autonomous motivation was a strong positive predictor of sportpersonship and a negative predictor of antisocial attitudes. In contrast, controlled motivation was a strong positive predictor of antisocial attitudes and a negative predictor of sportpersonship. These findings make conceptual sense. Athletes who are motivated to act due to feelings of enjoyment or task accomplishment (i.e., intrinsic motivation) or who value the outcomes of their sport participation, such as affiliation or health (i.e., identified regulation), do not have anything to gain by violating the rules of the game or engaging in a psychological warfare with their opponents. Indeed, it is likely that these athletes will enjoy their sport more or value to a greater extent the benefits of their sport participation if their goals have been achieved by playing by the rules and conventions of the game and if they have shown the appropriate respect to everyone involved, including their teammates, opponents, and officials. The present findings are similar to those reported by Vallerand and Losier (1994) who found that the relative degree of self-determined motivation (in essence, an autonomous minus controlled motivation composite) in adolescent hockey players predicted the extent of their sportpersonship in their sport.

In contrast, athletes motivated by internal (introjected regulation) and/or external pressures (external regulation), such as feelings of guilt or shame, fear of punishment (by the coach or teammates), or the desire to attain extrinsic rewards, are more likely to violate the spirit or the rules of the game and engage in gamesmanship or cheating and show disrespect for officials and opponents in an effort to appease pressures or attain rewards. As opposed to their autonomously

motivated counterparts, athletes acting out of controlled motivation are more likely to be driven by “the ends justify the means” philosophy. Research on the moral atmosphere created by significant others provides indirect evidence for this argument. For example, Stuart and Ebbeck (1995) showed that young basketball players who perceived their coach and teammates to endorse a range of what are commonly regarded as unacceptable behaviors (e.g., injure or curse at an opponent), were more likely to endorse and intend to engage in such behaviors themselves. It is possible that these athletes were inclined to engage in similar behaviors due to external regulation motives, such as to obtain social approval, attain rewards, or because of fear of punishment (in case they did not engage in such behaviors). Further, ego involvement, which introjection is a manifestation of (Deci & Ryan, 2002), has been found to relate to low levels of moral functioning (Kavussanu & Ntoumanis, 2003) and an endorsement of unsportsmanlike attitudes (Duda, Olson, & Templin, 1991).

As expected, the three psychological needs for autonomy, competence and relatedness, were direct and positive predictors of autonomous motivation. This finding is in line with Deci and Ryan’s (2000) theorizing and a large body of empirical research (e.g., see Vallerand, 2007). Further, autonomy and relatedness positively predicted sportspersonship and negatively predicted antisocial attitudes via autonomous motivation. Gagné (2003) also reported positive correlations between these two psychological needs and prosocial behavior. In the context of the present findings, it seems that when athletes feel a sense of volition in their sport strivings and when they have meaningful and authentic relationships with other individuals in their environment, they are more likely to be autonomously motivated. Since their motivated behavior is self-endorsed, these athletes are unlikely to succumb to internal or external pressures to gain unfair advantage in their sport by cheating or showing disrespect for officials, opponents and the rules of the game.

Contrary to our hypothesis and Deci and Ryan’s (2002) theorizing that the satisfaction of

the need for competence should result in adaptive consequences, competence need satisfaction was also a positive predictor of controlled motivation. Further, we found that competence had a significant positive indirect effect on antisocial attitudes, whereas its indirect effect on sportspersonship was non-significant. Our findings are also in contrast to the positive correlations between competence need satisfaction and prosocial behaviour reported by Gagné (2003).

A possible explanation for the link between competence and controlled motivation in our study is that the external regulation subscale (which was part of the controlled motivation factor) of the SMS taps concerns/preoccupation about one's adequacy of physical competence (e.g., "I play sport... to show others that I am good at it; because it allows me to be well thought of by people I know"; cf. Standage et al., 2003). In fact, according to Nicholls (1989), such preoccupations about one's physical competence often result in maladaptive consequences, as evidenced in this study by the indirect positive link between competence and antisocial attitudes. Nicholls argued that individuals could hold two different conceptions of ability. The first views ability as a fixed capacity and regards that increased effort can have only a limited impact on enhancing ability. This conception of ability leads to normative evaluations and concerns about one's standards. The other conception of ability holds that ability can be improved via increased effort. This conception leads to more adaptive, self-referenced evaluation criteria. In contrast to Nicholls' view of ability as a multi-faceted construct, SDT views competence as a unitary construct. As a result, SDT does not explain how social contexts impact on motivation by promoting one rather than another conception of ability (Ntoumanis, 2001). In competitive settings such as sport (as opposed to the settings studied by Gagné, 2003), individuals can satisfy their need for competence by demonstrating superiority and success over others and by gaining social approval (as measured by the external regulation subscale of the SMS), or by achieving self-referenced performance standards. When the former is the case, individuals are more likely to hold

antisocial attitudes or engage in antisocial behavior because, as Nicholls (1989) aptly put it, “when winning is everything, it is worth doing anything to win” (p. 133). Extending on past SDT work that has contrasted the effects of task- versus ego-involving feedback on intrinsic motivation, (e.g., Ryan, 1982), it would be interesting if future sport-related research distinguished between comparative and self-referenced means via which the need for competence could be satisfied. Further, external regulation measures with broader conceptual coverage should be used that tap external regulation reflecting fear of punishment or coercion.

Coach autonomy support was a positive predictor of all three psychological needs, in particular those for autonomy and relatedness. These findings are in accordance with our hypotheses and with a plethora of existing empirical evidence (cf. Vallerand, 2007). Further, autonomy support had a positive indirect effect on autonomous motivation and sportspersonship, and a positive indirect effect on controlled motivation (due to the positive link between competence and controlled motivation). Taken together, these findings highlight the important role that coaching behaviors can have on satisfying athletes’ psychological needs and indirectly impacting on their motivation and sportspersonship. Previous research grounded in achievement goal theory (e.g., Miller, Roberts & Ommundsen, 2003) has also shown that adaptive features of the motivational climate are related to sportspersonship in sport.

Applied Implications, Limitations and Future Research Directions

Our findings undergird the importance of autonomy supportive coaching behaviors in sport. Coaches who facilitate their athletes’ volition, offer them opportunities to experience success, and form with them meaningful relationships (and promote such relationships among their athletes) are likely to satisfy their athletes’ psychological needs, foster their self-determination, facilitate sportspersonship behaviors and reduce antisocial moral attitudes in sport. From a practical perspective therefore, a fundamental question arises from our findings, that is,

“How do we encourage coaches to interact with athletes in an autonomy-supportive manner?”

Aligned with past work which has shown an autonomy-supportive teaching style to be teachable (cf. Reeve, 1998), a forum that has much promise is that of coach education workshops. Indeed, such a medium would permit coaches to be educated on the benefits of supporting their athletes' sense of choice and self-initiation, responding to their thoughts and questions, emphasizing their perspective, providing meaningful rationales and using appropriate vocalizations. In addition to providing support for autonomy, coaches can structure the sporting experience so that it satisfies athletes' needs for relatedness (e.g., working in cooperation, setting group level goals, providing social support, etc) and competence (e.g., emphasizing improvement and effort, using appropriate feedback, etc). With the satisfaction of competence in mind, insight could be gleaned from the achievement goal perspective (cf. Nicholls, 1989). Indeed, our findings imply that coaches have to be careful about what criteria for competence they promote, because it is possible that athletes can satisfy their need for competence by displaying superiority over others and achieving normative success. In such situations, athletes will be tempted to violate the written or unwritten rules of the game in an effort to gain an advantage over their opponents.

Future research can expand upon our work by addressing some of the limitations of this paper. First, controlling coaching behaviors (e.g., use of pressure, conditional acceptance) should be measured alongside autonomy supportive ones. Controlling coaching behaviors have the capacity to undermine athletes' psychological needs and lead to maladaptive consequences (Mageau & Vallerand, 2003). Further, it would be interesting to examine whether in certain situations athletes might seek to satisfy their need for relatedness with their teammates and their coach by engaging in antisocial behaviors. Work on moral atmosphere suggests the plausibility of a link between relatedness and antisocial behavior (e.g., Kavussanu, Roberts, & Ntoumanis, 2002), although a link between relatedness and antisocial attitudes did not emerge in our study. These

types of questions are best researched employing a longitudinal (as opposed to our cross-sectional) design, preferably over the length of a competitive season. Future research could also expand upon our work by utilizing objective records or observations of athletes' sportspersonship and antisocial behaviors, besides athlete self-reports. However, often it is not always possible to ascertain whether athletes engage in certain behaviors by simply observing them. For example, some athletes can be quite subtle when they attempt to psychologically unsettle their opponents. Thus, athlete self-reports have an important place in this line of work. Lastly, researchers could explore the influence of other sources besides coaches (e.g., media, parents, spectators) on athletes' sportspersonship and antisocial attitudes and acts.

Conclusion

In this work we examined the utility of a model of motivational processes, guided by SDT, which aimed to predict sportspersonship and antisocial attitudes in a sample of British athletes. Overall, our findings supported the hypothesized conceptual model and reinforced the tenability of examining SDT variables to enhance our understanding of morality-related issues in sport. Our data supported a cogent body of existing literature (cf. Deci & Ryan, 2008) by showing perceptions of coach-created autonomy supportive environments and athletes' satisfaction of basic psychological needs to directly predict autonomous motivation, and indirectly, high levels of sportspersonship and low levels of antisocial moral attitudes.

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Footnotes

1. As existing measures of sport motivation do not assess integrated regulation (cf. Vallerand, 2007), this type of motivation was not assessed and will not be elaborated on further.
2. Due to the presence of a negative variance (i.e., Heywood case) when the latent factor “autonomy support” was indexed by 2 indicators, an addition parcel was created to resolve this issue. Thus, the latent factor “autonomy-support” was indexed in the SEM model by 3 indicators.

Table 1

Descriptive Statistics, Cronbach's Alphas, and Bivariate Correlations among the Study Variables

	<i>M</i>	<i>SD</i>	α	1	2	3	4	5	6	7	8
Autonomy support (1)	4.95	1.13	.91	-							
Autonomy (2)	4.97	1.02	.83	.48**	-						
Competence (3)	4.90	1.04	.84	.18**	.39**	-					
Relatedness (4)	5.43	1.03	.90	.39**	.33**	.24**	-				
Autonomous motivation (5)	4.88	.92	.84	.35**	.41**	.29**	.31**	-			
Controlled motivation (6)	3.88	1.14	.84	.03	.22**	.27**	.11	.53**	-		
Sportspersonship (7)	3.64	.44	.80	.20**	.19**	.10	.34**	.37**	.13*	-	
Antisocial attitudes (8)	2.61	.83	.84	-.07	-.01	.20**	-.08	-.02	.21**	-.24**	-

Note. * $p < .05$; ** $p < .01$.

The first six variables were measured on 7-point scales, whereas the last two variables were measured on 5-point scales.

Table 2

Standardized Parameter Estimates of Indirect Effects

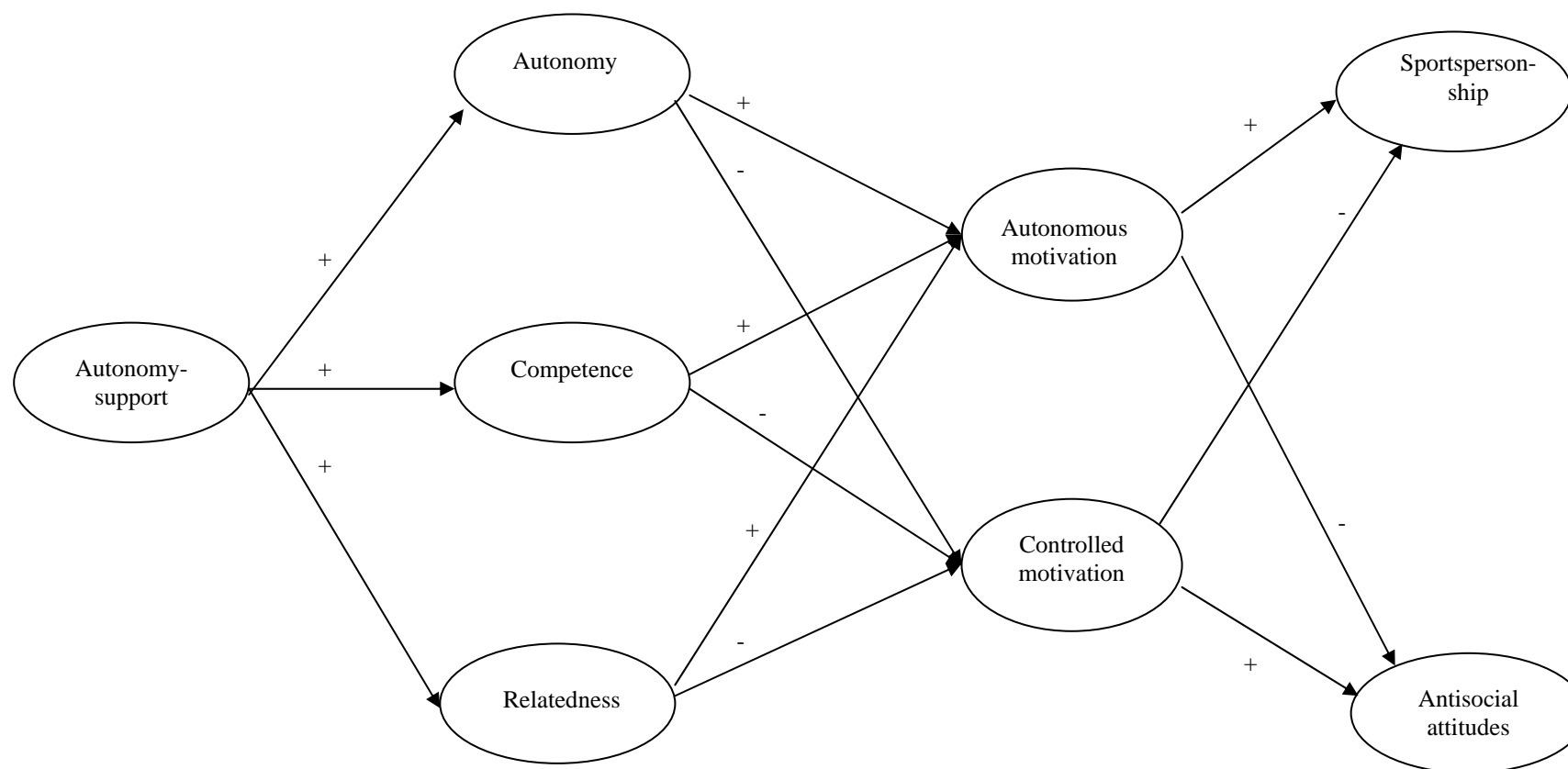
Parameter	Effect	Bootstrap Bias-Corrected 95% CI's (lower, upper)
Indirect effects		
Autonomy support → Autonomous motivation	.26*	.18, .36
Autonomy support → Controlled motivation	.08*	.04, .14
Autonomy support → Sportspersonship	.14*	.07, .25
Autonomy support → Antisocial attitudes	-.05	-.11, .01
Autonomy → Sportspersonship	.17*	.08, .29
Autonomy → Antisocial attitudes	-.09*	-.18, -.03
Competence → Sportspersonship	.02	-.08, .13
Competence → Antisocial attitudes	.14*	.06, .24
Relatedness → Sportspersonship	.12*	.05, .23
Relatedness → Antisocial attitudes	-.06*	-.14, -.01

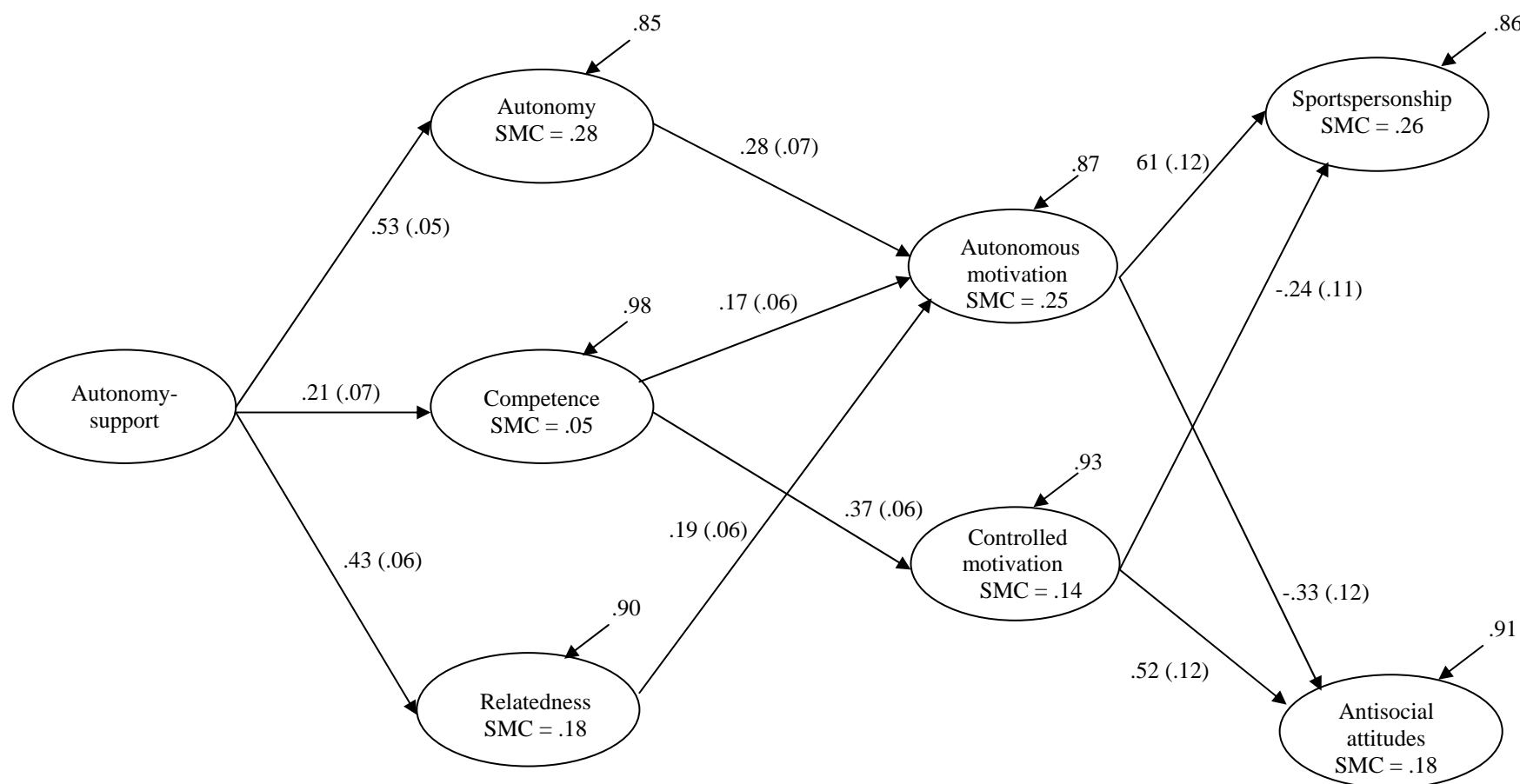
Note: * z value greater than 1.96 ($p < .05$)

Figure Captions

Figure 1. Hypothesized model of motivation predicting reported sportspersonship and antisocial attitudes.

Figure 2. Revised model of motivation predicting reported sportspersonship and antisocial attitudes.





Note: For visual simplicity, factor indicators and their respective errors are not reported, but are available from the corresponding author. All standardized estimates are significant ($p < .05$). The bootstrap estimate of the standard error for each parameter is shown in parenthesis, whereas the proportion of the variance explained for each dependent variable is denoted in each endogenous variable by its squared multiple correlation (SMC) value. Aligned with findings which have shown the psychological needs to be associated (e.g., Reinboth et al., 2004), the disturbance terms of the three needs were allowed to correlate. In the present work the correlations of the disturbances were as follows: $r_{\text{autonomy-competence}} = .41$; $r_{\text{competence-relatedness}} = .22$; $r_{\text{autonomy-relatedness}} = .20$. The disturbance terms between autonomous motivation and controlled motivation ($r = .57$), and between sportspersonship and antisocial attitudes ($r = -.47$) were also allowed to correlate. All correlations were significant ($p < .05$).